Remarks

This amendment is submitted in response to the Office Action of October 4, 2002. Reconsideration and allowance is requested.

In the office action at paragraph 1, the drawings were objected to because of the lack of clarity in Figures 2-5. Therefore, formal drawings are submitted herewith which should eliminate all such issues from this application.

Claim 19 was objected to as having an improper dependency; therefore, the dependency has been changed to eliminate this issue. Claims 4-6, 8-10 and 18 were rejected under 35 U.S.C. 112 as containing relative terminology; also claims 5,6,9 and 17 were objected to as using the term "approximately" and thereby being indefinite. These rejections are respectfully traversed. The terminology used in the claims appears in the specification and serves to indicate that the grooved region extends about 2 or past the center lines so that appropriate weakening in the desired region of the shoulder occurs to allow insertion of the counterplate. To require the applicant to limit his claims to a groove extending exactly to the center line would provide an easy avenue for any infringer who seeks to appropriate the merits of the invention to avoid infringement of the claims. Since the specification clearly indicates what the depth of the groove is desired to be, and the language of the claims is similar to the language of the specification, then the applicant is entitled to claims of this scope.

The claims are then rejected over a patent to Miura et al, under 35 U.S.C. 102. This rejection is respectfully traversed.

Reviewing in detail the Miura reference, contrary to the Examiner's contention, Miura does not in any sense teach or suggest means for weakening the radial stiffness or strength of the wall. On the contrary, the applicant Miura is expressly concerned with the fact that the wall may not be stiff enough and is seeking to maintain its strength as discussed at column 10, lines 25 – 47. Therefore, he wishes to provide a longer boundary for welding, by adopting one of the shapes shown for a short recess shown in Figures 4A through 4C.

After the two pieces are joined as shown for example at 60, then the welding process is carried out. Rather than seeking to weaken the shoulder at 33C, Miura hopes to maintain the strength of the shoulder, while forming a tapered guide portion 33C to facilitate the press fitting or insertion of the counterplate 44 as described at column 12, lines 15-20.

Finally, it is apparent from discussion at column 12 and the discussion at column 10 as well as a review of the figures that since Miura is not disposed to weakening the shoulder to facilitate insertion, that Miura certainly does not seek to provide a recess in either the inner or outer radius of the shoulder which extends to or about to the center line of the counterplate. Therefore, a key feature identified by the applicant and recited in the claims is not taught expressly in the Miura reference which means that the rejection cannot be under 35 U.S.C. 102; and since Miura is not seeking to weaken the shoulder, the rejection also cannot be sustained under 35 U.S.C. 103.

In view of these distinctions, reconsideration and allowance of the claims is respectfully requested.

If any matters can be handled by telephone, Applicant requests that the Examiner telephone Applicant's attorney at the number below.

The Commissioner is authorized to charge any additional fees to Deposit Account No. 20-0782 (Order No. STL 2987).

Respectfully submitted,

By: James A Sheridan
James A. Sheridan, Reg. No. 25,435

MOSER, PATTERSON & SHERIDAN, LLP
350 Cambridge Avenue, Suite 250
Palo Alto, California 94306-4036
Telephone: (650) 330-2310
Facsimile: (650) 330-2314

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

1. A spindle motor for use in a disk drive comprising a shaft supporting a thrust plate at one end thereof, a sleeve surrounding the shaft, and rotatable relative to the shaft and supporting a hub on the outer surface thereof, the sleeve having a surface adjacent the thrust plate and cooperating with the shaft to define a journal bearing and with the thrust plate to define a first fluid dynamic thrust bearing, a counterplate welded to an upraised axial shoulder of the sleeve and having a surface located adjacent a surface of the thrust plate to define at least a second fluid dynamic thrust bearing, fluid within the first and second thrust bearings and the journal bearing supporting relative rotation of shaft and sleeve, and a grooved region defined in the shoulder of the sleeve radially aligned with and adjacent the counterplate, and extending at or near the centerline of the counterplate.

2. A spindle motor as claimed in claim 1 wherein the groove region extends at least part way axially into the radially inner portion of the sleeve shoulder.

3. A spindle motor as claimed in claim 2 wherein the groove additionally extends into the radially outer surface of the counterplate.

4. A spindle motor as claimed in claim 2 wherein the grooved region extends to about half the axial[ly] extent of the counterplate.

5. A spindle motor as claimed in claim 1 wherein the groove is cut into the radially outer surface of the sleeve arm in a region approximately parallel to or near to the gap between the counterplate and the thrust plate.

6. A spindle motor as claimed in claim 5 wherein the groove is as an axially extent which is approximately half the width or axial width of the counterplate.

7. A spindle motor as claimed in claim 1 wherein the groove extends axially down the radially outer surface of the sleeve arm.

8. A spindle motor as claimed in claim 7 wherein the groove has an axial extent equal to about half the axial depth of the counterplate.

9. A spindle motor as claimed in claim 1 wherein the groove extends radially away from the counterplate into the sleeve, and extends from a point near to the junction between the radial and axial walls of the sleeve wall approximately part way toward the upper axial surface of the arm.

10. A spindle motor as claimed in claim 9 wherein the groove is about half the axial width of the sleeve wall and about half the axial extent of the counterplate.

11. A spindle motor as claimed in claim 3 wherein the radially outer wall of the groove is tapered toward the radially outer wall of the shoulder.

12. A fluid dynamic bearing comprising a shaft supporting a thrust plate at one end thereof, a sleeve surrounding the shaft, and rotatable relative to the shaft and supporting a hub on the outer surface thereof, the sleeve having a surface adjacent the thrust plate and cooperating with the shaft to define a journal bearing and with the thrust plate to define a first fluid dynamic thrust bearing, a counterplate welded to an upraised <u>arm</u> [axial wall] of the sleeve and having a surface located adjacent a surface of the thrust plate to define at least a second fluid dynamic thrust bearing, fluid within the first and second thrust bearings and the journal bearing supporting relative rotation of the shaft and sleeve, and a groove defined in the arm of the sleeve radially adjacent the counterplate<u>, and extending at or near the centerline of the counterplate</u>.

13. A bearing as claimed in claim 12 wherein the grooved region extends at least part way axially into the radially inner portion of the sleeve arm.

14. A <u>bearing</u> [spindle motor] as claimed in claim 13 wherein the groove additionally extends along the radially outer surface of the counterplate.

15. A <u>bearing</u> [spindle motor] as claimed in claim 12 wherein the groove extends axially down the radially outer surface of the sleeve arm.

16. A <u>bearing</u> [spindle motor] as claimed in claim 15 wherein the groove has an axial extent equal to about half the axial depth of the counterplate.

17. A <u>bearing</u> [spindle motor] as claimed in claim 12 wherein the groove extends radially away from the counterplate into the sleeve, and extends from a point near to the junction between the radial and axial walls of the sleeve wall approximately part way toward the upper axial surface of the arm.

18. A <u>bearing</u> [spindle motor] as claimed in claim 17 wherein the groove is about half the axial width of the sleeve arm and about half the axial extent of the counterplate.

19. A <u>bearing</u> [spindle motor] as claimed in claim 12 wherein the radially outer wall of the groove is tapered toward the radially outer wall of the shoulder.

20. A fluid dynamic bearing comprising a shaft supporting a thrust plate at one end thereof, a sleeve surrounding the shaft, and rotatable relative to the shaft and supporting a hub on the outer surface thereof, the sleeve having a surface adjacent the thrust plate and cooperating with the shaft to define a journal bearing and with the thrust plate to define a first fluid dynamic thrust bearing, a counterplate welded to an upraised axial shoulder of the sleeve and having a surface located adjacent a surface of the thrust plate to define at least a second fluid dynamic thrust bearing, fluid within the first and second thrust bearings and the journal bearing supporting relative rotation of shaft and sleeve, and means defined in the upraised <u>axial shoulder</u> [wall] for weakening the radial stiffness of the wall.